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ABSTRACT

This report describes the use of a model to compare the costs of two alternatives: initiation of a K-5, 45-15 year-round school, or the construction of an elementary school building in the Annville-Cleona, Pennsylvania, school district. The results of the analysis indicated that the initiation of a 45-15 year round plan would save the district about $89 per pupil of total operating costs in the last 18 years of the 20 year term of the district's bond issue. For the first two years, the savings would be $51 per pupil over the construction of a new building. Although the particular all year school plan analyzed in this situation was the 45-15 program, other specific plans with other pupil attendance arrangements could be analyzed by use of the model. (Author/JF)

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Year-Round School Research

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Year-Round School Research

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1972

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SUMMARY

In a project conducted by the Annville-Cleona School District and the Bureau of Educational Research, Pennsylvania Department of Education, the Furno Cost of Education Index (Furno, 1971) was revised and applied to analyze costs of a proposed year-round school plan and an alternative building program. The revised procedure can be used by any school district to compare costs of a year-round school plan and a new building program.

The analysis in the Annville-Cleona School District used actual budgetary and enrollment data to compare the cost of two alternatives: (1) Initiation of a K-5, 45-15 year-round school, or (2) construction of an elementary building.

The results indicate that in this particular district the initiation of a 45-15 year-round plan would save the district about $89 per pupil of total operating costs in 18 of the 20 years. For the first two years the savings would be $51 per pupil over the new building.

The 45-15 plan would require 11.78 mills additional funds for the first two years above present operating costs. After two years, funds required would drop to 6.32 mills. Compared to this, the new building would require 13.78 additional mills of local effort. In addition to the local savings, the state would save an estimated total of $2,023,000, or $101,151 per year for 20 years, in school building reimbursements.

Evaluation of the school subsidy under the present law indicates that the establishment of an all-year-round school in Annville-Cleona School District would result in an increased state subsidy. This is true since the state's top limit is $620 per WADM in 1971-72 and $665 in 1972-73 and Annville-Cleona has an approved reimbursement figure of $591 for 1971-72. Annville-Cleona's reimbursement fraction in 1971-72 is .6193. The increased expenses due to year-round operation will result in increased state reimbursement for a district such as Annville-Cleona.

While the particular all-year school plan analyzed as an alternative in this situation was the 45-15 program, other specific plans with other pupil attendance arrangements could be analyzed by use of the model.

The following abbreviations are defined below for the convenience of the reader:

ADA Average Daily Attendance

RADA Resident Average Daily Attendance which includes all students attending in a school system plus students who go to public schools outside the school system for which the home school system pays tuition. RADA does not include students attending your schools but residing in another district and it does not include private or parochial school students.

APU Ability Pupil Unit is used in estimating the wealth behind each student. It is computed by multiplying the secondary RADA by 1.3 and adding to this figure the elementary ADA.

EPU Expenditure Pupil Units are used in computing a school district's expenditures. Since it costs more to educate a high school student than it does to educate an elementary school student, the ADA for high school students is multiplied by 1.3 and this figure is added to the elementary ADA.

LMC Learning Materials Center

TPU Total Pupil Units reflect the total pupils educated.

TVP True Valuation per Pupil.

WADM Weighted Average Daily Membership in which each kindergarten pupil attending one-half day counts as one-half, each elementary pupil as one, and each secondary pupil as 1.36.

REVIEW OF RELATED LITERATURE

Furno designed and developed and School Management magazine published the first national cost of education index to help school districts with the question, "How can educational productivity be increased without a disproportionate increase in spending?" The Cost of Education Index (CEI) presents a valid means of analyzing school expenditures, facilitating district budget planning and helping plan for an all-year school. The CEI also facilitates national and regional comparisons of current school expenditures with a data history extending back a decade (Furno, 1969).

The unit of per pupil costs is used in the CEI published by School Management. Other standard procedures and definitions are used that have been provided by the United States Office of Education (Reason and White, 1966). The use of these units, procedures and definitions, together with the available regional cost data for more than 10 years, can provide results for a district that uses the same CEI model.

To determine whether a school district's expenditures are reasonably well balanced, Furno (1967) presented a method of cost evaluation and quality control. The method involves the construction of six profiles of spending patterns, each of which compares the performance of the school district with performances nationally using the percentile rank of the district for comparison. The six areas compared are: financial climate, spending policy overall, spending policy for net current expenditures, budget allocations, salary policy and staffing policy. The profiles provide a district an opportunity to compare its spending patterns to those of other districts in the nation. While every district may diverge from national spending patterns, a study of the differences may give a good idea of the district's problems. If, for example, a school district's patterns were like those of a fictional Franklin District, then its indices for local effort, operations and debt service are considerably above the 50th percentile while well below the level on staffing policy and quite uneven on salary policy. Should a district with these profiles consider an all-year school? The profiles display clearly the financial problems (Furno, 1971).

The CEI, with its methods of computing per pupil costs and the quality control profiles of Furno, can be adapted to cost analysis of possible alternatives when school districts consider an all-year school. The problem is to construct a revised model of the CEI that can be applied to cost analysis of all-year schools.

To apply the revised model of the CEI to various plans of all-year schools, a selection must be made between different alternatives. These were classified. Consideration was limited to elementary schools. McLain (1969) suggested there are three different kinds of approaches to all-year schools. One approach is to limit the number of students in attendance at any one time by scheduling vacations for some fraction of the enrollment on a rotating basis. Another approach is to accelerate students so they complete the traditional 12-year program of public education in 11 years or less. Another possibility is individualization of schedule and curriculum. These are the kinds of alternatives that could be studied.

Each kind of all-year school has its advocates and examples. The 45-15 and 60-20 plans are examples of the principle of limited attendance. The 45-15 plan has been implemented at the Valley View School District, Lockport, Illinois (Beckwith, 1970). Several accelerated plans have been tried out by the State of New York (Thomas, 1966, 1968). The Continuous Progress Plan and the Flexible All-Year School Plan (McLain, 1969) are examples of individualization.

On what bases should a selection be made of an all-year plan for study and possible implementation? All-year plans are usually advocated to reduce either operational or school construction costs, i.e., capital outlay (McLain, 1969). For example, plans for acceleration of students are forecast to reduce operational costs by accelerating graduation rates. Similarly, limited attendance plans are suggested for the purpose of reducing capital outlay.

"The greatest potential for savings is in capital outlay." (McLain, 1969). Because limited attendance plans have the primary purpose of reducing capital outlay, the greatest potential for savings lies with this kind of plan.

In addition, the limited attendance plans require the smallest degree of change in curriculum, compared to the requirements for curriculum change for accelerated and individualized plans. Only a reorganization of curriculum is required for limited attendance plans.

The 45-15 plan of the limited attendance model was selected for study. The plan provides five periods of 45 days of attendance and four 15-day vacation periods.

The 45-15 plan divides the enrollment of a district into four groups (A, B, C, D). All students of the same family and the same neighborhood are included in the same group. Each group attends school for a period of 45 days and then vacations for 15 school days. Each group has four such periods of attendance and vacation each school year, making a total of 180 days of attendance for each student. The school district is in operation continuously except for two weeks in the summer when students do not attend. According to O'Dell and Henderson (1970), there are three areas of change: teacher's work schedules, busing and student room schedules. Teachers have their choice of teaching either with one of the groups on the group's time schedule or for a period of 11 1/2 months. If the latter alternative is selected, the teacher can earn perhaps one-fourth more than with the traditional nine-month schedule. The plan can provide ample time for in-service training, teacher-parent conferences, course preparation, etc., so pressure is eased upon the teacher's schedule. Pupils ride different buses each 45-day period and each of the four groups has six bus routes, so cards are put into bus windows to identify the route. Drivers must learn more than one route. Routes are shortened when groups are selected according to neighborhoods because buses do not enter the area in which one group lives while the group vacations. To deal with changes in room assignments, pupils must be told when they leave for their next 15-day vacation to what room to return for the beginning of the next cycle. Class

schedules and room assignments must be decided in advance four times each year for each group.

This plan has the unusual advantage of easing the work load. Report cards are prepared at the end of each 45-day period but for only 75 per cent of the enrollment, so there are fewer records to handle at one time for the office staff. The long period of pupil attendance of the 180-day plan is normally broken only by specified holidays, but the 45-15 plan observes all holidays and also provides four periods of three weeks' vacation for pupils. This breaks the tedium of the 180-day schedule without providing long vacation periods in which students can forget. Teachers like the plan because they can select either an 11 1/2-month schedule or a three-period one with a group. In any case, the period of assignment to one group is shortened so a teacher who might have a difficult set of pupils will soon have a different set. The 45-15 plan eases the pressure on office staff, students and teachers (Driscoll, 1971).

The 45-15 plan may reduce the requirements for some resources (Driscoll, 1971). Careful pupil selection and efficient bus scheduling may result in fewer buses used. However, if growth is anticipated, the same number of textbooks, lockers, audio-visual equipment, etc., would be required. Fewer buses running more days over shorter distances may result in savings. But overall savings in operational costs are not claimed by proponents of all-year plans. The cost advantages lie in possible reductions in school construction costs and reimbursements, especially for districts in which peaks of enrollment have been passed.

OBJECTIVES

The objectives of this study were:

1. To apply Furno's CEI published by School Management and the Furno method of profile evaluation to the sample school district.

2. To compare and evaluate per pupil costs of an all-year elementary division (K-5) using the revised Furno CEI model. To evaluate per pupil costs of alternatives. (This model is intended for any district's use.)

3. To determine the effect in mills of the state subsidy for school buildings and the basic state subsidy for instruction on school districts that compare an all-year program to a new school building.

PROCEDURES

Description of the Sample

Annville-Cleona School District is a merger of four small-town districts. Current enrollment (1971-72) is 1,327 in grades K-6 and 1,118 in grades 7-12. There is a 50 per cent rural constituency. In terms of ethnic origin, more than 70 per cent are German and more than 20 per cent are Italian (all second or later generation). Less than five per cent are Oriental and Puerto Rican. There is no Negro constituency.

Present conditions are expected to change under the influence of several recent developments. These include two new mobile home parks (capacity about 300 homes) which have recently been planned, new highway bypass construction which is expected to motivate new housing construction, undeveloped land which may soon be opened to a housing development through the extension of city water into the area, and new activity at the Hershey Medical Center which is bringing residents into the area. Under the influence of these events, it is anticipated that elementary enrollment will increase about 100 pupils per year for the next five years.

If additional classrooms could be provided through the use of an all-year plan, overcrowded conditions could be relieved and services could be improved in areas that are set aside in an elementary building for library and an embryonic instructional materials center. There is insufficient space at the present time for these services: conferences, curriculum planning, small study groups, physical education facilities, adaptive physical education, specialist and individual or remedial work.

While overcrowded conditions do prevail in certain areas, this is not the primary problem with which the district is confronted at the present time. Classrooms are not overcrowded since two portable classrooms were installed for use with elementary students. The latter

facilities have reduced class sizes to 30 pupils. The primary problem of the district lies with grades 7 and 8 that are mingled with secondary grades.

The school board and the administrative staff consider it imperative to separate pupils of the 7th and 8th grades from those of secondary grades as soon as possible. To accomplish this objective, it is necessary to find some way to release elementary classrooms.

If this can be planned by the projected means of analysis and evaluation, then 7th and 8th grade students that are now assigned to the Annville-Cleona Junior-Senior High School can be moved to the Annville building. Sixth grade students would be moved to the same building.

The alternative is to build a new elementary building. The Annville-Cleona School District has three General Obligation bond issues at the present time. One issue is for $100,000 (dated 11/1/62) at two and three-fourths per cent interest; another is for $156,00 (dated 10/1/61) at three and one-fourth per cent interest. Another bond was issued for $250,000 (dated 8/5/71) at four per cent interest, which is not reflected in the Swan report (Appendix A, page 43). There appears to be adequate unused bonding power ($2,097,960) with which the district would finance a new building. This would require the vote of the electorate. The rating of the district at the present time is Baa and the average interest on municipal bonds is near six per cent. Deployment of pupils after building construction would be revised. An authority to the financing would be an alternative.

The long-range plan of the school district was revised in 1971. (See Swan, Appendix A.) The provisions of this revision guided the cost analysis of the project.

Description of the Model

The CEI model is not entirely suitable in its present form for application to cost analysis of all-year schools. The model uses estimated budget categories for combined elementary and secondary divisions, i.e., the entire district. While this practice is adequate for the purpose for which the CEI was constructed, changes are needed to make the model adequate for cost analyses of alternative all-year school plans.

Superintendents might not wish to implement an all-year school plan K-12; on the contrary, many might prefer to implement a selected plan first in the elementary division of a district and later in the secondary division if results are acceptable. Therefore, the CEI must first be divided into elementary and secondary divisions using the principle that the elementary expenditures plus secondary expenditures sum to district expenditures.

The analyses are based upon encumbered funds that will be spent according to plans that have already been made. This means that the revised model can be made comparable to the original model of the CEI.

To evaluate alternative plans for all-year schools, the following sequence of questions and steps is involved:

1. Is the district in a financial position to make changes in organization and facilities?

   a. Compute CEI of the district at present. Use Furno's original methods.

   b. Prepare six profiles of spending performances that portray the percentile rank of the district in relation to the national performance for the following factors: financial climate, spending policy (overall), spending policy (net current expenditures), budget allocations, salary policy and staffing policy (Table 1, page 9).

   c. Evaluate profiles. Are problems revealed? If there are no serious problems, the district may be in a position to make changes.

2. What are the cost bases for elementary and secondary divisions?

   a. Compute CEI for existing elementary division using the normal procedures and the existing school plan.

   b. Compute CEI for existing secondary division.

   c. Ascertain that the total elementary expenditures plus total secondary expenditures equal total expenditures for the district.

   d. Determine costs of capital outlay, debt service, and funds paid to other districts--figured separately for elementary and secondary. The indices that are obtained furnish the bases for comparison with the indices for the all-year school plan for the elementary division and in the future, a possible all-year secondary plan.

3. What is the cost per pupil for the alternative of the existing district plus a new elementary building?

   a. Compute CEI for elementary division as in number two plus the services to man the new building. The expenditures of the elementary division are the starting point for this work.

   b. Determine the costs of capital outlay, debt service and funds paid to other districts--figured separately for elementary

Table 1

Information from SCHOOL MANAGEMENT (January 1972)
Necessary to Compare Similar Districts

How to find your region

Region 1: Me., N.H., Vt., Mass., R.I., Conn. Region 2: N.Y., N.J. Penn. Region 3: Ohio, Ind., Ill., Mich., Wisc. Region 4: Minn., Iowa, Mo., N.D., S.D., Neb., Kan. Region 5: Del., Md., D.C., Va., W.Va., N.C., S.C., Ga., Fla. Region 6: Ky., Tenn., Ala., Miss. Region 7: Ark., La., Okla., Tex. Region 8: Mont., Ida., Wyo., Colo., N.M., Ariz., Utah, Nev. Region 9: Wash., Ore., Calif., Alaska, Ha.

How to find your district size using actual enrollments

Size 1--More than 25,000
Size 2--10,001 to 25,000
Size 3--5,001 to 10,000
Size 4--2,501 to 5,000
Size 5--1,201 to 2,500
Size 6--601 to 1,200
Size 7--300 to 600

How to find your expenditure group based on Net Current Expenditures

1--Less than $399 per pupil
2--$400 to $475 per pupil
3--$476 to $550 per pupil
4--$551 to $625 per pupil
5--$626 to $700 per pupil
6--$701 to $775 per pupil
7--$776 to $850 per pupil
8--More than $851 per pupil

How to find your wealth group based on true valuation per pupil

(If market value of all taxable land in your district is $6 million, with 600 students your wealth is $10,000 per student.)

1--Less than $10,000 TVP
2--$10,001 to $16,000 TVP
3--$16,001 to $22,000 TVP
4--$22,001 to $28,000 TVP
5--$28,001 to $34,000 TVP
6--$34,001 to $40,000 TVP
7--$40,001 to $46,000 TVP
8--More than $46,000 TVP

and secondary divisions. These costs were added to the various categories in Question 2.

c. Compute the CEI for secondary division in the changed condition.

d. Sum the total expenditures for the elementary and secondary divisions. Compute the CEI for the district.

4. What is the cost per pupil for the 45-15 plan?

a. Compute the classroom configuration and the number of teachers required, assuming the Annville building would be devoted to grades 6-8 for a middle school and ADA would remain unchanged in all grades.

Decisions regarding policy changes with personnel and facilities were made by a committee consisting of the district superintendent, the elementary supervisor and the three principal investigators.

Determine increases or decreases in personnel, buses, textbooks, etc., that could be expected if the 45-15 plan is implemented. Determine a rationale for each expectancy and change the elementary CEI categories.

b. Compute Average Daily Attendance 45-15 and Expenditure Pupil Unit for the elementary division. Compute Expenditure Pupil Unit for the secondary division. To compute per pupil costs for all-year schools, it is necessary to distinguish between, and use indices for, the rate with which pupils are routed through the elementary system and the through-put or total pupils educated. For the existing nine-month schools, there is no difference. But for the 45-15 plan, the rate or ADA is lower that that of the traditional, while the school year is longer so one must also consider the total pupils educated as the TPU.

c. Compute the TPU for the 45-15 plan by dividing the expected ADA by .75.

d. Compute total expenditures in each of the categories of the index based upon enrollment for 11 1/2 months. The other categories such as capital outlay, debt service and funds paid to other districts are computed separately for the elementary and secondary divisions.

e. Compute cost per elementary pupil indices for each category by dividing total expenditures by TPU. This is the CEI for the 45-15 plan, elementary division. Divide

secondary expenditures by EPU. (Used since secondary is not going year round.)

The indices that are obtained by these procedures furnish the bases for comparison.

f. Estimate the start-up costs for an all-year plan by determining the additional costs required for bus and pupil scheduling, curriculum reorganization and development, in-service training, publicity and public relations.

5. What are the costs of the CEI for a district with a new elementary building compared to a district using the TPU for a 45-15 plan?

Calculate the millage required for each plan by dividing the increase of expenditure for each plan by the value of one mill.

6. What is the effect of the state subsidy for school buildings upon the cost of the new building plan versus the 45-15 plan?

Compute the reimbursement percentage for the new building. Multiply the reimbursable pupil capacity of the new building by $2,300 (elementary) to determine the reimbursable cost of the new building. When this product is divided by the final approved project cost of the new building, the result is the reimbursement percentage. The amount of these reimbursement payments by the state to the district can be obtained by multiplying the debt service payments of the district by the building reimbursement percentage and the aid ratio. The result is the amount of the reimbursement payments by the state to the district for the new building. To determine the reduction in mills these payments mean to the district in terms of reducing the cost of the new building, divide the reimbursement payment by the one mill equivalent value. When this reduction in mills is subtracted from the mills required to finance the increase due to the new building, the result is the effect in mills of the state subsidy for the new building. This can be compared to the cost in mills with the cost for the 45-15 plan.

The above sequence of questions and methods constitutes a revised CEI that is designed to compare costs of alternative school-year plans with conventional nine-month plans and a new building. Step-by-step procedures for computing profiles and index work sheets are contained in Appendices C and D.

RESULTS

Results are presented as they relate to each question.

1. Is the district in a financial position to make changes in organization and facilities?

The elementary ADA was 1,290, the secondary ADA 1,040 for the first three months of the 1971-72 school year. Using these data, the district EPU was computed 1,290 + (1,040 x 1.3) = 2,642. The Ability Pupil Units were computed 1,290 + (Sec. RADA, 1,049 x 1.3) = 2,654. The district is classified as size 5, expenditure group 6, wealth group 2 and region 2 (Table 1, page 9). Using these data, the total expenditures of each category of the CEI were divided by the EPU for the district. The result was the CEI for Annville-Cleona School District, 1971-72 (Table 2, page 13).

When the data of Table 2 are examined, it is apparent that Annville-Cleona spent $13.39 per pupil for administrative salaries compared to $14.42 for the region, $13.73 for the same size district and $11.53 for districts of the same wealth group.

Wages paid by the district for administrative secretarial personnel were $8.62, below the $10.04 paid in the region, slightly above that paid by districts of the same size and wealth group.

Salaries paid to teachers were $404.07 compared to $481.02 paid in the region, $403.92 paid by districts of the same size and $428.07 by districts of the same wealth group. Salaries paid to other professionals were $33.24, well below those paid in the region ($55.25), in districts of the same size ($47.97) and by districts of the same wealth group ($61.28). Salaries paid to secretarial and clerical personnel were $17.68 per pupil compared to $18.93 paid in the region, $12.92 paid in districts of the same size and $19.13 paid by the same wealth group. Salaries paid to health professionals were $8.50 compared to $10.89 for the same region, $3.35 for districts of the same size and $4.11 for districts of the same wealth group.

Operational costs were $60.65 per pupil, somewhat above districts of the same size ($57.98), well below other districts in the region ($75.09) and below costs by districts of the same wealth group ($64.20). Salaries for operation were $27.42, well below salaries paid in the region ($41.21), in districts of the same size ($29.01) and in districts of the same wealth group ($35.90).

The most obvious discrepancy in spending practices is found in district expenditures for maintenance at $8.12. This figure is far below the per pupil expenditure for this category for other districts in the region ($23.05), other districts of the same size ($18.89) and other districts of the same wealth group ($21.81). The adequacy of the expenditure of the district for maintenance should be questioned.* Salaries paid

*A $250,000 bond was issued to pay for maintenance activities.

Table 2

Comparison of Per Pupil Costs of District, 1971-72*

Category	Median Region 2	Median Size 5	Median Expend. Group 6	Annville-Cleona
Administration	35.99	27.80	27.10	40.75
Professional salaries	14.42	13.73	11.53	13.39
Secretarial, clerical	10.04	7.12	8.06	8.62
Instruction	606.43	515.43	554.65	494.76
Salaries, teachers	481.02	403.92	428.07	404.07
Other professionals	55.25	47.97	61.28	33.24
Secretarial, clerical	18.93	12.92	19.13	17.68
Textbooks	7.35	5.84	6.07	7.57
Teaching materials	24.43	19.59	20.93	21.32
Attendance Service	0.41	---	---	15.08
Health	13.39	3.93	5.06	10.19
Professional salaries	10.84	3.35	4.11	8.50
Operation	75.09	57.98	64.20	60.65
Salaries	41.21	29.01	35.90	27.42
Heat	9.93	8.53	7.87	10.21
Utilities	13.09	11.74	12.95	10.21
Maintenance	23.05	18.89	21.81	8.12
Salaries	10.30	5.65	8.63	4.30
Fixed Charges	101.76	54.77	53.35	66.21
Social Security, pension	62.90	38.91	43.01	46.57
Food Service	2.17	1.17	0.91	1.89
Student Body Activities	7.36	2.21	3.24	14.21
Net Current Expenditures	887.54	681.56	735.04	711.89
Transportation	46.29	39.20	28.82	24.13
Capital Outlay	8.81	17.44	17.90	4.72
Debt Service	110.33	46.39	66.04	107.37
Principal	56.50	24.32	35.19	106.92

*School Management, 16 (1), January 1972.

Note: Region 2 consists of New York, New Jersey and Pennsylvania.

by the district for maintenance were $4.30 per pupil compared to $10.30 paid by districts in the same region, $5.65 paid by districts of the same size and $8.63 paid by districts of the same wealth group.

Fixed charges paid by the district were $66.21 per pupil compared to $101.76 paid in the region, $54.77 paid by the same size districts and $53.35 paid by districts of the same wealth group.

Food services expenditures were approximately the same at $1.89 per pupil compared to districts in the same region, size and wealth group.

Annville-Cleona School District spends substantially more for student body activities at $14.21 compared to districts in the same region ($7.36), same size ($2.21) and the same wealth group ($3.24).

The district spends much more for attendance services* at $15.08 per pupil compared to $0.41 per pupil by districts in the same region. Data were not available for districts of the same size and wealth group.

Net current expenditures were $711.89 for the district compared to $889.54 for districts in the same region, $681.56 for districts of the same size and $735.04 for districts of the same wealth group.

Expenditures by the district for transportation and capital outlay were well below comparable figures for the region, the same size district and the districts in the same wealth group.

Debt service expenditures for the district were $107.37 close to $110.33 for the same region, but more than double the $46.39 for districts of the same size and considerably more than the $66.04 for districts of the same wealth group.

An evaluation of the comparison of Table 2 suggests that the district may have some adjustments to make in its spending practices. An examination of Table 2 suggests the district may not be in a financial position to consider changes in facilities or organization that would accentuate the present divergencies in expenditures indicated in the various categories.

Profile 1 was prepared by dividing Assessed Valuation by APU. Full Valuation was divided by APU. State Per Capital Income and State Effort Index were not available to school districts for the current year, so they were not computed. The Local Effort Index was computed by dividing the Local School Revenue per EPU by the Full Valuation per APU. Local Revenue per EPU was computed by dividing the Local School Revenue by EPU. The State Aid Index was computed by dividing Income from State Sources by EPU.

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*Annville-Cleona records guidance salaries under attendance services. Federal handbook II places guidance salaries under instructional costs. For comparison purposes, per pupil costs ($14.16) should be included under instructional costs and deducted from attendance services.

Federal Aid was computed by dividing the Income from Federal Sources by EPU. These data were plotted on Profile 1 according to Furno (1971).

Profile 1 indicates that assessed value is above the 30th percentile, true value about the 15th percentile and local effort is above the 90th percentile. These results indicate that the district is high on local effort though low on true value. Local revenue is slightly above the 50th percentile while state aid is high at the 80th percentile. Federal aid is at the 50th percentile.

Profile 2 was prepared by dividing the Grand Total Expenditures by EPU. The sum of the Capital Outlay and Debt Service Expenditures were divided by EPU. Total Current Expenditures were divided by EPU. Transportation Expenditures were divided by EPU. The Net Current Expenditures were divided by EPU. The outstanding debt was divided by the APU. The resulting statistics were plotted on Profile 2 according to Furno (1971).

Profile 2 indicates that the district is within normal ranges on each category of the profile except for outstanding debt. About 70 per cent of districts have less outstanding debt than Annville-Cleona.

Profile 3 was prepared by dividing the expenditures for each of the following categories by the EPU: net current expenditures, administration, instruction, operation, maintenance, fixed charges, textbooks and teaching materials. The results were plotted on Profile 3 (Furno, 1971).

Profile 3 indicates, on a breakdown of net current expenditures, that all expenses are within normal ranges except those for administration and maintenance. To what source can the high level for administration be attributed? An examination of Table 2 shows that salaries are within normal range. Table 3 shows that other administrative expenditures are $18.72 per pupil. The increase appears due to this factor. About five per cent of districts spend less for maintenance.

Profile 4 was prepared by dividing the following categories of expenditures by the net current expenditures and multiplying by 100: administration, instruction, textbooks, teaching materials, operation, maintenance, fixed charges and transportation.

Results expressed as a per cent of the net current expenditures were plotted on Profile 4 (Furno, 1971).

Profile 4 portrays the same categories of Profile 3 but as a per cent of the net current expenditures. Results accentuate the low expenditures for instruction and maintenance.

Profile 5 was prepared by plotting the lowest and highest salary on the scale for teachers. The number of years teachers must serve to reach the maximum salary was identified. The average salary of classroom teachers was obtained by dividing the total paid for teacher salaries by the total number of teachers paid. The average salary paid to

administrators was computed by dividing the total salary paid to the superintendent and his assistant by the two persons paid in this category. Principals are included in instructional staff, according to Furno. The average salary paid to other professionals was obtained by dividing the total amount paid by the number to whom the money was paid; $87,843/7. The average salary of clerical employes was obtained by dividing the total paid to these employes by the number paid; $22,880 + 46,715/19. The average salary of maintenance staff was obtained by dividing the total amount paid by the number of persons paid; $11,365/1.83. The average salary of custodial staff was obtained by dividing the total amount paid by the number of persons paid; $72,465/14. Results were plotted on Profile 5 (Furno, 1971).

Profile 5 portrays the salary policy of the district. All data of the profile are below the 50th percentile, which means that more than 70 per cent of the districts pay more salary to beginning teachers, about 60 per cent pay a little more maximum salary and require fewer years for teachers to reach the maximum salary, pay teachers about the average, pay administrators about the same, pay other professionals a little more, pay clerical staff considerably more and pay custodial and maintenance staff more.

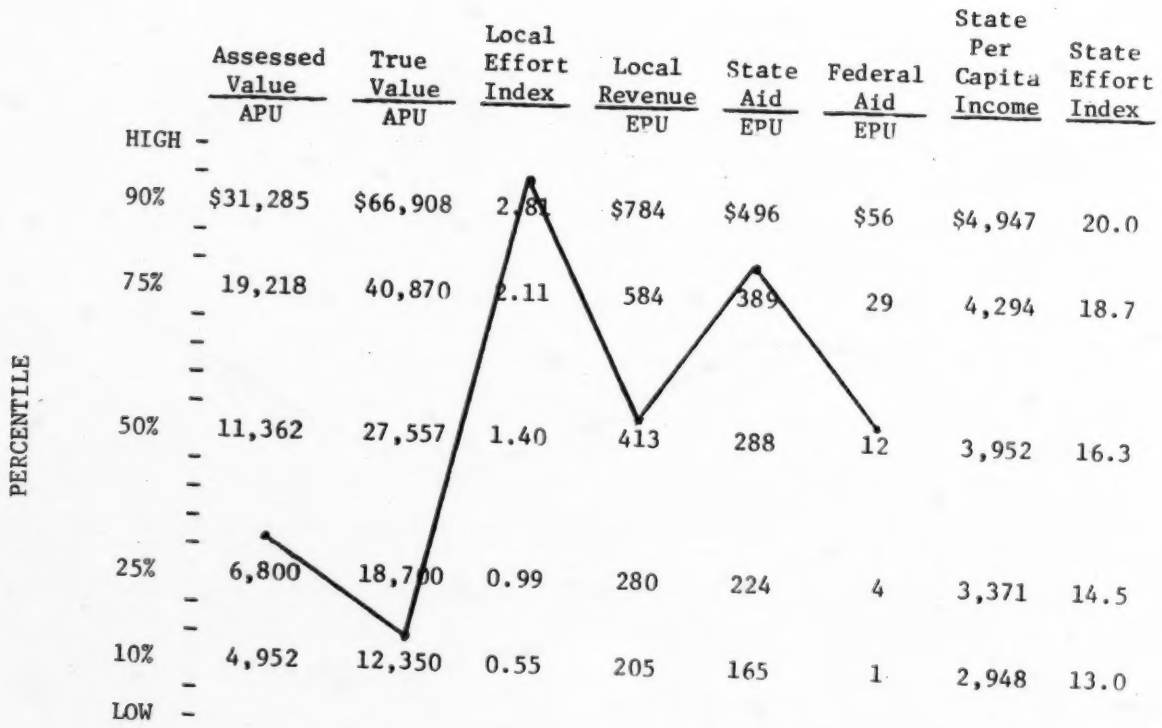
Profile 6 was prepared to portray the staffing policy for each 1,000 pupils. The following statistics were divided by 2.5 (the number of thousands of pupils served): number of professional staff, classified staff, administrators, classroom teachers, other instructors, clerical staff, custodial staff and of maintenance staff. Results were plotted on Profile 6 (Furno, 1971).

It is then of interest to examine Profile 6 which portrays the adequacy with which the district is staffed per 1,000 pupils. Only three areas show abnormality. Only 20 per cent of districts have more classified staff. About 75 per cent of districts have more instructional professionals (excluding teachers) and about 20 per cent of districts have more clerical help. About 60 per cent of districts have more maintenance staff.

These profiles on the next several pages (See Appendix C, page 51, for actual computations) were plotted at the approximate point of percentile placement for the district. This operation did not require computation of percentile ranks. Furno's graphs provide the level of each statistic that corresponds to the following percentile ranks: 10 per cent, 25 per cent, 50 per cent, 75 per cent and 90 per cent. To place the statistics for the Annville-Cleona District on these graphs, e.g., financial climate, the computed value of $7,260 for assessed value was plotted at about the 30th percentile. In summary, the financial position of this district lends itself to making changes in organizational structure.

Profile 1

FINANCIAL CLIMATE



PERCENTILE	Assessed Value APU	True Value APU	Local Effort Index	Local Revenue EPU	State Aid EPU	Federal Aid EPU	State Per Capita Income	State Effort Index
90%	$31,285	$66,908	2.81	$784	$496	$56	$4,947	20.0
75%	19,218	40,870	2.11	584	389	29	4,294	18.7
50%	11,362	27,557	1.40	413	288	12	3,952	16.3
25%	6,800	18,700	0.99	280	224	4	3,371	14.5
10%	4,952	12,350	0.55	205	165	1	2,948	13.0

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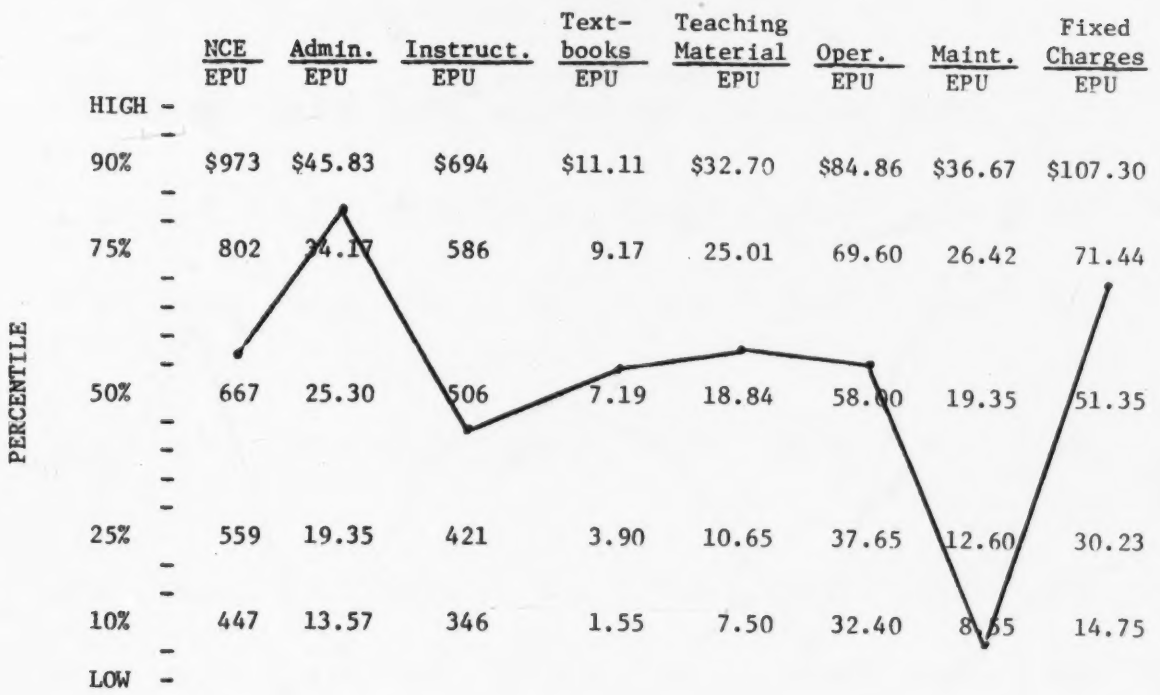
Profile 2

SPENDING POLICY: OVERALL

PERCENTILE	Grand Total Expend. EPU	Capital Outlay & Debt Service EPU	Total Current Expend. EPU	Trans-port. EPU	NCE EPU	Outstand-ing Debt APU
HIGH						
90%	$1,130	$195	$982	$62.65	$973	$1,412
75%	946	120	825	44.45	803	913
50%	776	81	696	28.68	667	514
25%	640	58	582	14.20	559	279
10%	520	35	404	7.10	447	105
LOW						

Profile 3

SPENDING POLICY
BREAKDOWN OF NET CURRENT EXPENDITURES

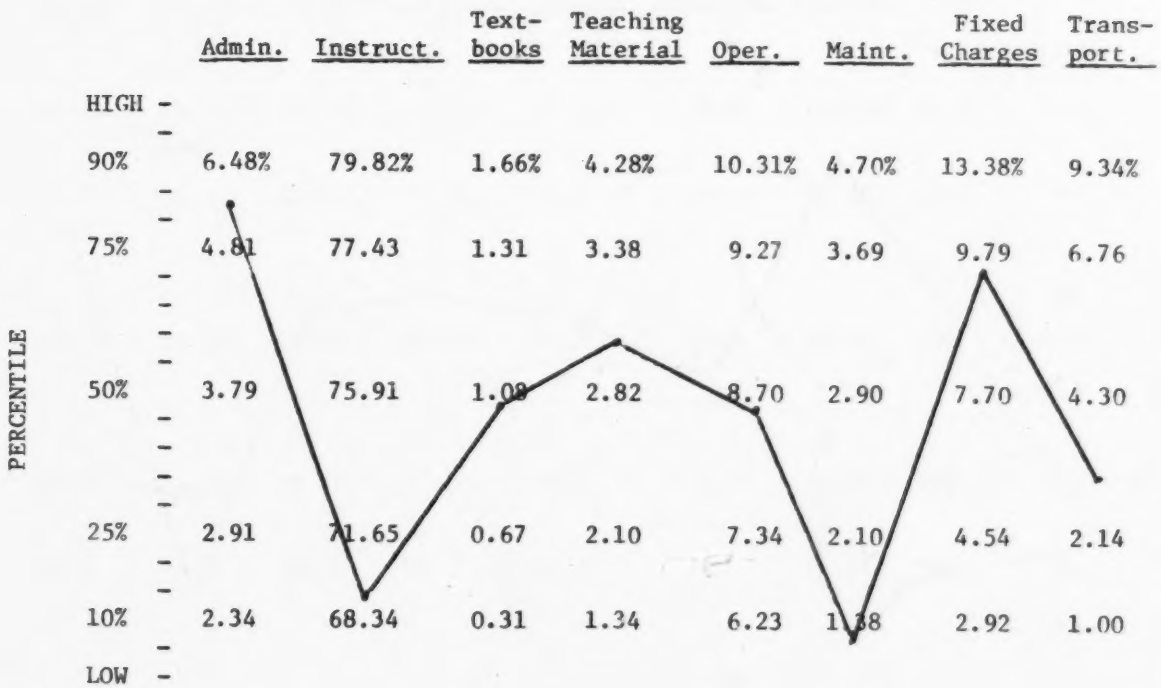


	NCE EPU	Admin. EPU	Instruct. EPU	Text-books EPU	Teaching Material EPU	Oper. EPU	Maint. EPU	Fixed Charges EPU
90%	$973	$45.83	$694	$11.11	$32.70	$84.86	$36.67	$107.30
75%	802	34.17	586	9.17	25.01	69.60	26.42	71.44
50%	667	25.30	506	7.19	18.84	58.00	19.35	51.35
25%	559	19.35	421	3.90	10.65	37.65	12.60	30.23
10%	447	13.57	346	1.55	7.50	32.40	8.55	14.75

Profile 4

BUDGET ALLOCATIONS

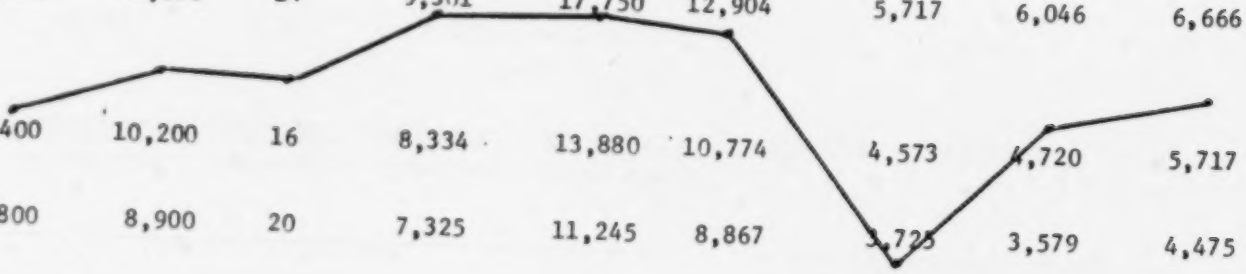
MAJOR FUNCTIONS: PER CENT OF NCE



Profile 5

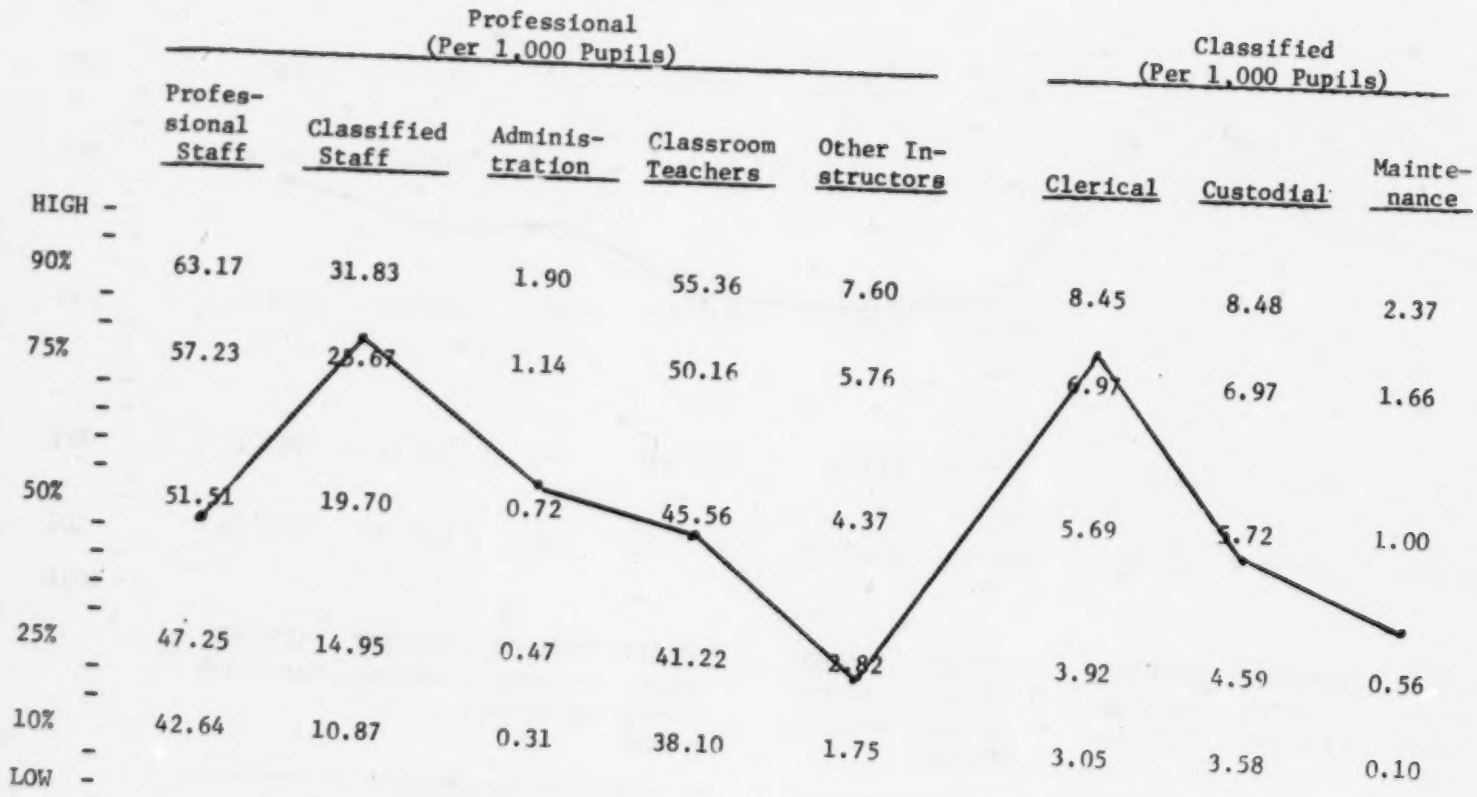
SALARY POLICY

PERCENTILE	Teachers				Administration		Classified		
	Beginning Salary	Maximum Salary	Years to Reach Maximum	Average Salary Class-room	Average Salary Admin.	Average Salary Other Prof.	Average Salary Clerical	Average Salary Custodial	Average Salary Mainte-nance
HIGH									
90%	$7,500	$15,331	10	$11,678	$23,224	$18,898	$8,236	$8,164	$10,779
75%	7,200	13,927	12	10,424	20,732	15,447	6,897	7,160	8,741
50%	6,825	12,036	14	9,301	17,750	12,904	5,717	6,046	6,666
25%	6,400	10,200	16	8,334	13,880	10,774	4,573	4,720	5,717
10%	5,800	8,900	20	7,325	11,245	8,867	3,725	3,579	4,475
LOW									



Profile 6

STAFFING POLICY



2. What are the cost bases for elementary and secondary divisions?

The procedures were as follows: total expenditures in each category of the index were obtained from source documents (Appendix B, page 50). Expenditures were apportioned to elementary and secondary divisions on the basis of the per cent of total enrollment in the division; 55 per cent for elementary and 45 per cent for secondary. Actual expenditures were available for some categories and these were used when possible. Estimates came from Form DECO-504 and the operation and maintenance categories of DECO-504 were separated for the divisions so that they added to the total recorded in the source document.

Paraprofessional aides (Budget categories 216-218-219) were added to secretarial and clerical personnel using actual salaries.

These methods were used to obtain total expenditures in each category for the elementary and secondary divisions separately. Then the CEI's were computed for the elementary and secondary divisions by dividing the total expenditure in each category by the appropriate EPU for the division. The result was the present CEI for the elementary and secondary divisions (Table 3, page 24).

3. What is the cost per pupil for the alternative of a new building?

The costs with a new building were determined as follows: Changes were sought in the budgeted expenditures for each category of the CEI for the elementary division.

For administration expenditures, no changes were anticipated, so the budget for this category and its subcategories remained unchanged since the same number of elementary buildings will exist.

For the category of instruction there were changes anticipated. If the new building is constructed, the Annville building will be converted to a middle school for grades 6-8. This step will remove the 6th grade enrollment from the elementary enrollment. Then the enrollment in grades K-5 and two elementary special education classes will be served by Cleona (14 rooms), North Annville (12 rooms) and the new building (18 rooms). In this event, the enrollment by grades and the classroom requirements for grades K-5 and the middle school will be indicated in Table 4.

The number of teachers required to serve classrooms for the elementary division will be 40 plus 2 art, 2.5 music, 1.5 physical education and 1 reading teacher (Total 47). The requirements for salaries were obtained by multiplying the total number of teachers required by the average salary for a classroom teacher ($9,250) for a product of $434,750. To this product was added $12,249 for substitute teachers, etc. (.55 x $22,270).*

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*The budget for the school district is in Appendix B, page 50.

Table 3

Present Cost of Education Indices, 1971-72
Elementary, Secondary and District

Annville-Cleona School District

Category	[1290] Elementary	[1352] Secondary	[2642] District
Administration	45.91	35.83	40.75
Professional salaries	15.09	11.78	13.39(2)
Secretarial, clerical	9.72	7.58	8.62(4)
Other	21.09	16.46	18.72
Instruction	506.61	483.44	494.76
Salaries, teachers*	405.21(56)	402.98(57)	404.07
Other professionals*	37.63(3)	29.06(4)	33.24
Secretarial, clerical*	19.76(9.5)	15.69(5.5)	17.68
Textbooks*	7.75	7.39	7.57
Teaching materials	24.01	18.75	21.32
Other	12.23	9.55	10.86
Attendance	10.50(1)	19.45(2)	15.08
Health	11.18	9.24	10.19
Professional salaries*	9.28(1.5)	7.76(1)	8.50
Other	1.89	1.48	1.68
Operation	66.39	55.18	60.65
Salaries	28.96(8)	25.96(6)	27.42
Heat	11.51	8.98	10.21
Utilities	11.51	8.98	10.21
Other	14.40	11.24	12.78
Maintenance	9.15	7.14	8.12
Salaries	4.84(1)	3.78(.83)	4.30
Other	4.30	3.36	3.82
Fixed Charges	74.58	58.22	66.21
Social Security, pension	52.46	40.95	46.57
Other	22.12	17.26	19.63
Food Service	2.13	1.66	1.89
Student Body Activities	None	27.76	14.21
Net Current Expense	726.47	697.97	711.89
Transportation	27.18	21.22	24.13
Salaries	12.44	9.71	11.05
Other	14.73	11.50	13.08
Capital Outlay	5.32	4.15	4.72
Debt Service	72.69	140.49	107.37
Principal*	72.32	139.94	106.92
Interest*	.37	.55	.46
Expenditures to Other Districts	28.25	32.95	30.65
Total Expenditures	859.93	896.80	878.80

*Actual expenditures

Note: Numbers in parentheses specify number of people employed.

Table 4

Classrooms Required With New Building
Grades K-8

Grade		Enrollment	Total No. of Classrooms
Special		30	2
K		160	4
1		204	8
2		200	8
3		179	6
4		187	6
5		189	6
	Total	1,149	40
6		187	6
7		203	7
8		172	6
	Total	562	19

Salaries for other instructional professionals include those for four professionals for a total of $48,543.

Salaries for secretarial and clerical help were changed by the addition of two aides for learning materials centers. This is part of the Swan plan by which LMC's are created in the Cleona, North Annville and Annville buildings. The present elementary librarian would go to the Annville LMC and supervise three aides. The addition of two aides would cost about $5,000 for a total of $30,495 for a total of 9.5 personnel.

Textbooks remain the same but would be partitioned $8,500 for the elementary division and $11,500 for the secondary division.

Expenditures for the teaching materials category include budgeted expenditures of $3,000 each year for each LMC for library and audio-visual purchases for a total of $39,984. Stocking and furnishing the LMC's are listed under costs of construction and debt service.

Attendance expenditures (guidance) remain unchanged at $13,546 for salary for one person.

Under the health category, salaries remain unchanged at $11,980. Other expenditures remain unchanged.

In the operation category, salaries increase due to the addition of 1.5 persons and an additional $2,000 for summer wages. Total salaries of $48,862 include wages for summer cleaning. Expenditures for heat, utilities and other subcategories remain unchanged.

Maintenance salaries increase due to the addition of one person at $6,000 per year. The other subcategory expenditures increase by one-fourth.

Transportation expenditures increase due to about 150-200 more elementary students that will have to be bused to the new elementary building. These students are walking to school at present but will have to be bused to the new building. One more bus is needed at $9,000. One more driver is required at $2,250 per year. Other expenditures increase about $1,000 for the cost of operating one additional bus per year.

The new elementary building is proposed to provide two kindergarten rooms, one special education room and the equivalent of three rooms for each of the five grades of the elementary division. Also included are a learning materials center, a multipurpose room and a cafeteria. The building capacity will be 580 students (Swan, Appendix A, page 43), 480 plus 100 additional students (per administrative decision).

Actual per pupil costs of construction of a building like this were obtained from the Bureau of School Construction. Costs, including those of a bond issue to defray the expense, were combined into additional debt service payments that were added to existing schedules of debt service.

The allocation for pension and Social Security under fixed charges was determined by summing all the salaries paid in the division and allocating 10 per cent for this item. The other category was unchanged.

Food service was unchanged.

No expenditures were allocated for student body activities.

Capital outlay and expenditures to other districts remained the same.

The CEI's for the secondary division, with the alternative of a new building, were developed next. For this discussion, it may help to recall that, though a new elementary building is considered as an alternative, the elementary division will remain with three buildings since the present Annville elementary building would be used as a middle school. Expenditures in some categories reflect this increase in facilities by considering the middle school in the secondary division.

Expenditures in the secondary administration category remain unchanged.

Salaries for 66 teachers are $610,500 plus $10,021 (.45 x $22,270) for substitute teachers, homebound instruction and terminal pay.

Salaries for other professionals are increased by the addition of one middle school principal at $15,000, one middle school librarian at $9,250. Together with $28,500 for two principals and $10,400 for the high school librarian, the total expenditures for other professionals are $63,150.

One secretary will be added at $4,500 to make a total for the sub-category of $25,720.

Textbooks, teaching materials and other expenditures remain unchanged.

Increased attendance at the secondary level requires the addition of one guidance person at $9,250 to make a total expenditure of $35,500.

The salary for one-half nurse is added to health salaries at $4,000 to make a total of $14,500. The nurse will serve the middle school. Other expenditures for health increase by about $1,000 for a total of $3,003.

Salaries for operation remain unchanged at $35,103. Heat, utilities and other expenditures are increased by about one-fourth due to the conversion of the Annville building to a secondary facility. So 40 per cent of $14,850 is added to the secondary heat and utilities budget of $12,150. The other category of the secondary operation increased by about one-fourth of $18,583. This was added to the existing secondary budget for other expenditures, resulting in a total of $15,205.

The secondary maintenance salaries are about $8,114 for 1.3 persons and the other category of maintenance is increased by about 40 per cent (.40 x $6,946) added to $4,547 for an allocation of $7,325.

Under food service, four women are added at $2,500 each.

Student body activities and transportation allocations remain about the same.

As in the elementary division, the secondary division allocation for pension and social security under fixed charges was determined by summing all the salaries paid in the division and allocating 10 per cent for this item. The other category was unchanged.

Debt service allocations for the elementary and secondary divisions were computed in the following manner: Table 5 shows that the district will borrow about $2,679,000. If it is assumed that this quantity of money is borrowed through a local authority at six per cent interest over a 20-year period, and an amortization table is consulted, then the cost of principal and interest is $80.24 per thousand. The amount of debt service for each division is then computed.

Expenditures to other districts will remain the same (Table 7, page 30).

Table 5

Computation of Debt Service
Alternative of New Building

North Annville, Cleona Buildings (Elementary)		
Renovations for LMC's		$ 20,000
Lighting		60,000
New Elementary		
Equipment		1,950,000
Furnishings		195,000
Middle School		
Same as 45-15		210,000
High School		
Same as 45-15		40,000
Equipment		110,000
Site Acquisition		85,000
New Bus		9,000
	Total	$2,679,000
	Elementary Total	2,319,000
	Secondary Total	360,000

Increase in Debt Service, Elementary

2,319 x 80.24 = 186,077

Increase in Debt Service, Secondary

360 x 80.24 = 28,886

This increase is added to the existing amounts of debt service for each division.

The computation of EPU is illustrated in Table 6. The anticipated expenditures in each category were then divided by the appropriate elementary ADA or secondary EPU. The results are reported in Table 7, the CEI's for the alternative of a new building, for the elementary and secondary divisions and the districts.

Table 6

Computation of EPU
New Building

Elementary ADA	
Special education	26.892
K-5	1,080.924
	1,107.816
ADA, elementary = 1,108	
Secondary EPU	
9-12	621.208
7	196.675
8	167.992
Special education	20.833
Vocational-technical	33.525
	1,040.233
1,040.233 x 1.3* =	1,352.3029
Grade 6	182.200
	1,534.503
Secondary EPU = 1,535	
District EPU = 2,643	

*Furno's weighting for secondary pupils

Table 7

Cost of Education Indices
New Building
Elementary, Secondary and District

Annville-Cleona School District

Category	[1108] Elementary	[1535] Secondary	[2643] District
Administration	53.44	31.57	40.73
Professional salaries	17.57	10.38	13.39(2)
Secretarial	11.31	6.68	8.63(4)
Other	24.56	14.50	18.72
Instruction	532.77	494.57	510.58
Salaries, teachers	403.43(47)	404.25(66)	403.90
Other professionals	43.81(4)	41.14(5)	42.26
Secretarial, clerical	27.52(9.5)	16.76(6.5)	21.27
Textbooks	7.67	7.49	7.57
Teaching materials	36.09	16.52	24.72
Other	14.25	8.42	10.86
Attendance	12.23(1)	23.13(3)	18.56
Health	13.02	11.40	12.08
Salaries	10.81(1.5)	9.45(1.5)	10.02
Other	2.21	1.96	2.06
Operation	87.68	61.19	72.29
Salaries	44.10(9.5)	22.87(6)	31.77
Heat	13.40	11.79	12.46
Utilities	13.40	11.79	12.46
Other	16.77	14.75	15.60
Maintenance	14.62	10.06	11.97
Salaries	8.35(1.5)	5.29(1.33)	6.57
Other	6.27	4.77	5.40
Fixed Charges	83.67	70.83	76.21
Social Security, pension	57.91	53.99	55.64
Other	25.75	16.84	20.58
Food Service	2.48	7.98	5.68
Student Body Activities	---	24.46	14.21
Net Current Expense	799.91	735.18	762.31
Transportation	34.59	18.69	25.36
Salaries	16.53	8.56	11.90
Other	18.06	10.13	13.46
Capital Outlay	6.20	3.66	4.72
Debt Service	252.58	142.08	188.40
Principal	---	---	---
Interest	---	---	---
Expenditures to Other Districts	32.90	29.02	30.65
Total	1,126.17	928.63	1,011.44

Note: Numbers in parentheses specify number of people employed.

4. What is the cost per pupil for the 45-15 plan?

The CEI was computed for the 45-15 plan, assuming that grades 6, 7 and 8 were assigned to the Annville building. This assignment placed the Annville building in the secondary division because the elementary 45-15 plan applies in this project only to grades K-5.

The ADA for grades K-5 was computed by multiplying the present ADA of 1,080.924 by .75. The product (810.9) is the ADA for grades K-5. Only three of the four groups of the elementary division will attend at any one time under the 45-15 plan.

The ADA was divided by .75 to obtain TPU for the elementary divisions 45-15 plan. In this case, the original ADA of 1,081 is recovered. This is true because no change was assumed in the enrollment or ADA for either the new building or the 45-15 plan. For districts which can anticipate changes this would not be true. Enrollment data were used to determine the needs for classrooms, textbooks, home rooms, number of teachers, etc., for the 45-15 plan for the elementary division. The total expenditures were determined for each category for 11 1/2-months operation using these statistics.

Since the Annville building is now used to serve the elementary enrollment and the elementary buildings are already at capacity, the question is, are there enough classrooms to serve the reduced enrollment K-5 and the enrollment in grades 6-8 in the North Annville (12 rooms), the Cleona (14 rooms) and the Annville (25 rooms) buildings?

To resolve this question, the enrollments in grades K-5 were reduced one-fourth as they would be under the 45-15 plan by multiplying the grade enrollment by .75. To obtain the number of classrooms that would be required by this grade enrollment, the grade enrollment was divided by the number assumed to be in the classroom. For example, the number in the kindergarten classroom was assumed to be 50 (two sessions per day of 25 each). Single sessions were planned for other elementary grades. The data and results of the classroom analyses are in Table 8.

Table 8 indicates that 30 classrooms will be needed under the 45-15 plan for grades K-5. Only 26 are available at the Cleona and North Annville buildings. Since 51 classrooms are required for grades K-8, including two special education classes, four additional classrooms are not available at the Annville building for elementary use. Therefore, the cost analysis for the elementary 45-15 plan must include the cost of four portable classrooms. Another alternative would be the 45-15 plan in grades K-8.

Congestion is not relieved in the elementary division by use of the 45-15 plan, K-5. This is not due to a defect of the plan. The plan does remove about 281 pupils from elementary classrooms (1/4 of K-5). There will be 592 middle school students in the middle school (grades 6-7-8).

Table 8

Enrollment in Grades K-8, Present and Projected 45-15 Plan

Building	Grade	Enrollment		Class-rooms Needed	Assumed No. Classroom
		Present	45-15		
North Annville and Cleona (26 rooms)	K	80	120	3	50
	1	204	153	6	25
	2	200	150	6	25
	3	179	134	5	28
	4	187	140	5	30
	5	189	141	5	30
	Total	1,119	838	30	
Annville (25 rooms)	6	187	---	6	30
	7	203	---	7	30
	8	172	---	6	30
	Elementary Special Ed.	30	---	2	--
	Total	592		51	

Having determined approximately the number of classrooms needed to serve grades K-8, the changes in total expenditures were determined for each category of the CEI under the projected plan. To determine the per pupil costs of the 45-15 plan in the division, it was necessary to divide the total costs in each category by the TPU. Start-up costs were determined separately. The elementary division was considered first.

Under the category of administration, it was decided that professional salaries (2), secretarial and clerical salaries (4) and other expenditures would remain unchanged.

Under the category of elementary instruction, 30 teachers are needed in 30 classrooms and additional teachers are required on the staff as follows: 2 art, 2.5 music, 1.5 physical education and 1 reading. The total teachers are 37. The average teacher's salary is $9,250. Under the 45-15 plan this was increased one-fourth using the rationale that a teacher would work either four or five periods (one-fourth longer) so the average salary was multiplied by 1.25 and the product was multiplied by 37. The result is $427,794, the projected teachers' salaries, K-5. To this was added $8,078 for substitutes, homebound instruction and terminal pay, allocated according to the number of teachers (37/102 x 22,270).

Under the category of other instructional professionals, the two principals' salaries were not changed at $31,800. Two librarians' salaries increased one-fourth, so $8,918 was multiplied by 1.25. The reading consultant's salary of $9,925 was multiplied by 1.25. Other professionals' salaries were increased from $48,543 by the increase in three salaries, making a total of $55,354 for five elementary teachers.

The elementary secretarial and clerical salaries were increased one-fourth by multiplying the existing salary of $25,495 by 1.25 for a product $31,869.

The cost of textbooks remained the same under the 45-15 plan, but the cost of textbooks for the 6th grade is assigned to the secondary expenditures. The expenditures for textbooks were partitioned at $8,500 for K-5 and $11,500 for the secondary.

Start-up costs were assigned to the elementary "other" category under instruction. These were estimated* at about $100,000 per year for two years (about $150,000 for curricular reorganization and $50,000 for community relations, in-service training). After the two-year start-up period, this cost would drop to approximately $13 per pupil for an additional saving of about $38 per pupil for the district.

Attendance expenditures include the salary of a guidance counselor in this study. The present salary of $13,546 was increased by 1.25. Computer scheduling costs of $2,000 were added for a total of $18,932.

Health salaries were increased by multiplying the existing salary of $11,980 for one elementary person by 1.25. Other costs were left unchanged.

Fourteen operations staffs were divided into eight to serve elementary schools and six to serve the secondary schools. Since it was decided by consultation with the foreman that four additional operations staffs would be required to clean classrooms on weekends, salaries are figured at $2.50 per hour for an operation of 104 days. Operational salaries were estimated in this manner at $45,682 for K-5.

Heating expenditures were estimated to remain unchanged, but utilities expenditures other than heat were increased by one-fourth, so the existing cost of $14,850 was multiplied by 1.25 for a product of $18,562. Other operational costs were increased in the same degree.

The maintenance salary for one person was left unchanged at $6,251. Other maintenance costs were increased by multiplying existing cost $5,557 by 1.25.

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*District Superintendent's estimate

Pension and Social Security payments by the district were approximated in proportion to the number of teachers in the divisions (37/102 x 123,060 for elementary). The allocation for the secondary was similarly 65/102 x 123,060. The same principle was followed to obtain the allocations for the other category (37/102 x 51,884; 65/102 x 51,884).

Food service was estimated to remain unchanged. Changes might occur in some districts due to increased overhead.

Student body activities were estimated to remain unchanged at zero.

Hourly wages for transportation were estimated to increase about 10 per cent. Nine buses would be used for secondary pupils, seven would be used for elementary pupils and two would be used for vocational pupils. The same number of buses would be used as under the present usage. Costs of gas and oil and maintenance would remain the same. Thus, salaries were increased by multiplying the present cost, $16,060, by 1.10. Bus scheduling costs were estimated to increase by about $1,000. The latter figure was added to the other transportation costs, $19,011, for a total of $20,011.

Capital outlay expenditures were assumed to be unchanged for the 45-15 plan for the elementary division.

Debt service was computed for the elementary division for the 45-15 plan by adding four portable classrooms ($80,000), physical renovations for LMC ($20,000) and improved lighting ($60,000). With $10,000 for equipment for two LMC's, the total to be borrowed by local authority at about six per cent for 20 years was estimated to be $170,000. The cost per year for principal and interest is $80.24 per thousand. Thus, the increase in debt service for the elementary is $13,640, added to the existing debt service of $93,778.*

Expenditures to other districts remain the same.

Changes in expenditures in the secondary school budget were considered.

Administration costs remained the same under the 45-15 plan.

Expenditures were developed in the instruction category as follows: To determine the number of teachers that are needed in the secondary division, 57 are needed for grades 7-12, six are needed for grade 6 and two are needed for elementary special education for a total of 65 secondary teachers. To obtain salaries, 65 teachers were multiplied by the average salary of the district ($9,250) for a product of $601,250. To this figure was added $14,192 for substitute teachers, homebound instruction and terminal pay allocated according to number of teachers (65/102 x 22,270)

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*Normally, districts that would decide to incorporate air conditioning for all-year facilities would include the cost under debt service (or capital outlay, if available). Since the need, kind and the cost are entirely dependent upon local conditions, the cost of air conditioning was not included in this application of the model.

for a total salary allocation of $615,442. The total number of teachers required by the district under the 45-15 plan is 102, so the district "saves" 11 teachers by the 45-15 plan. This assumes the district decides to use the equivalent of the minimum of 37 full-time teachers for 12 months for grades K-5.

Other professional salaries, secondary division, would increase. A middle school principal would be added at $15,000. The secondary librarian's salary increased by one-fourth, so the salary of $10,400 was multiplied by 1.25. The librarian at the middle school receives $9,250. The salaries of the high school and assistant high school principals remain unchanged. The total salaries for five personnel is $65,750.

Secretarial and clerical salaries increase. A middle school secretary was added at $4,500 for a total for the category of $25,720.

Textbooks are not increased, the allocation for the secondary is $11,500.

Teaching materials and other instructional costs remain unchanged.

Attendance costs increased with the addition of one more guidance person at $9,250, making a total for the category of $35,550.

Health salaries increase $4,000 by the addition of .5 nurse for service in the middle school. The total for the category is $14,500.

Operation charges remain unchanged.

Maintenance salaries and other costs for maintenance remain unchanged.

Changes in fixed charges were determined by allocating charges to the division according to the number of teachers in the division.

Food service is self-supporting in both the elementary and secondary divisions, so costs remain the same, reflecting only a loan granted internally by the school district pending the receipt of state subsidy.

Student body activities for the secondary division remain unchanged.

Transportation salaries were estimated to increase by approximately 10 per cent, so $1,300 was added to the existing budget for the category, making a total of $14,400. Other costs in the category were estimated to remain unchanged.

Capital outlay was assumed unchanged.

Debt would increase about $390,000 for the secondary division. This includes the following changes in the Annville building to convert to a middle school: LMC renovation, $10,000; lighting, $30,000; locker rooms, $50,000; ventilation, $20,000; carpeting, $25,000; conversions of rooms, $75,000; equipment of shops, $80,000 and equipment of home economics

rooms, $20,000. The cost of converting high school rooms was estimated at $30,000 and the cost of carpeting was placed at $10,000. The cost of paying principal and interest is $80.24 per thousand. Thus, the increase in debt service for the secondary division is $31,294.

Secondary EPU's were computed, according to the CEI method, by considering junior high as secondary pupils. In the case of the Annville-Cleona School District, 7th and 8th grades are taught in the junior high school so the ADA for these grades is multiplied by 1.3 to obtain EPU for these grades. Other ADA which were also multiplied by 1.3 are those for the vocational-technical pupils, special education secondary pupils and grades 9-12. In the particular 45-15 plan which is analyzed, the 6th grade and elementary special education pupils are also taught at Annville and are not included in the 45-15 plan. The ADA for these pupils was added to the EPU obtained above for the EPU secondary. Table 9 shows the computations of the secondary EPU.

Table 9

Computations

		ADA	
Vocational-technical		33.525	
Special education, secondary		20.833	
Grade 7		196.675	
Grade 8		167.992	
Grades 9-12		621.208	
	Total	1,040.233	
1,040.233 x 1.3 = 1,352.3029		EPU	
Secondary		1,352.3029	
Grade 6		182.200	
Special education, elementary		26.892	
	Total	1,561.391	EPU secondary, 45-15 plan

A table of budgeted expenditures was prepared for each category of the CEI as outlined above. To obtain the CEI's for each category of the CEI, the budgeted expenditures for the elementary and secondary divisions and the district were divided by the appropriate TPU and EPU. The results are exhibited in Table 10. These are the per pupil expenditures for the 45-15 plan.

Table 10

Cost of Education Indices
45-15 Plan, K-5

Annville-Cleona School District

Category	[1081] Elementary	[1561] Secondary	[2642] District
Administration	54.78	31.04	40.75
Professional salaries	18.01	10.20(2)	13.40
Secretarial, clerical	11.60	6.57(4)	8.63
Other	25.17	14.26	18.73
Instruction	627.54	484.74	543.17
Teachers salaries	403.21(37)	394.26(65)	397.92
Other professionals	51.21(5)	42.12(5)	45.84
Secretarial, clerical	29.48(9.5)	16.48(6.5)	21.80
Textbooks	7.86	7.37	7.57
Teaching materials	28.66	16.24	21.32
Other	107.11	8.27	48.76
Attendance	17.51(1)	22.74(3)	20.60
Health	16.12	11.21	13.22
Professional salaries	13.85(1.5)	9.29(1.5)	11.16
Other	2.26	1.92	2.06
Operation	93.80	47.80	66.62
Salaries	42.26(12)	22.49(6)	30.58
Heat	13.74	7.78	10.22
Utilities	17.17	7.78	11.62
Other	20.63	9.74	14.20
Maintenance	12.21	6.19	8.65
Salaries	5.78(1)	3.28(.83)	4.30
Other	6.43	2.91	4.35
Fixed Charges	58.70	71.42	66.22
Social Security, pensions	41.29	50.24	46.58
Other	17.41	21.18	19.64
Food Service	2.54	1.44	1.89
Student Body Activities	None	24.05	14.21
Net Current Expenditures	883.20	700.63	775.33
Transportation	34.85	19.21	25.61
Salaries	16.34	9.25	12.15
Other	18.51	9.96	13.46
Capital Outlay	6.35	3.60	4.73
Debt Service	99.37	141.25	124.11
Principal	---	---	---
Interest	---	---	---
Expenditures to Other Districts	33.72	28.42	30.66
Total Expenditures	1,057.50	893.20	960.44

Note: Numbers in parentheses specify number of people employed.

5. Are the costs per pupil less for the 45-15 plan than for the district with a new elementary building?

The net current expenditure per pupil for the district under the 45-15 plan for the first two years is about $775 (Table 10, page 37) compared to about $762 (Table 7, page 30) for the alternative of the new building and about $712 (Table 3, page 24) for the district in its present condition. The greater net current expense per pupil for the 45-15 plan is attributed largely to the start-up costs for the first two years of the year-round plan.

The results indicate that the decision to initiate an all-year plan in this particular school district means an increase of $63 per pupil, assuming constant daily attendance for the first two years. The third year the added cost would drop $25 per pupil over the present costs. These results support the suggestion of McLain that all-year schools cannot be expected to decrease operational expenditures.

This question still remains: "Is the cost of the all-year plan less than that for a new building?"

The total expenditure per pupil for the 45-15 plan was computed at $960, compared to $1,011 for the alternative of the new building and $879 for the existing district. These totals include substantial investments in school renovation and portable classrooms for the 45-15 plan that increase the debt service to about $124 per pupil compared to about $188 per pupil for the alternative of the new building. Even when additional allowance is made for these substantial investments for the 45-15 plan, the all-year plan still "saves" about $51 per pupil, compared to the alternative of the new building. After two years, this saving would increase to about $89 per pupil.

In view of these results, the district superintendent might want to present both alternatives to the school board for further consideration. In that event, the school board might ask the question: "What millage increase is required for the two plans?"

To determine the millage that is required to accept either alternative, the total expenditures of the district in its present condition were subtracted from the total anticipated expenditures for the 45-15 plan and for the new building. The result is the increase in expenditure that is anticipated for each plan: $215,704 for the 45-15 plan and $351,451 for the new building. Assuming 95 per cent tax collection, the assessed value of the school district is $19,267, 460 x .95 or $18,304,000. This amounts to $18,304 for one mill. To compute the mills required to fund the increase in expenditure due to the two plans, the increase is divided by $18,304.

The results indicate that 11.78 mills are required to finance the 45-15 plan and 19.20 mills are required to finance the new building alternative. The effect of the Commonwealth building reimbursement will reduce the 19.20 millage requirement for the new building.

After two years due to the start-up costs, there is a reduction of 5.46 mills for the 45-15 plan (100,000/18,304). The actual increase in total expenditures over the existing district for the 45-15 plan after two years is (11.78 - 5.46) or 6.32 mills for all future years.

6. What is the effect of the state subsidy for school buildings upon the cost of the new building plan versus the 45-15 plan?

To determine the effect of the state school building subsidy upon the two plans, the reimbursable pupil capacity (805)* was multiplied by $2,300 for a product $1,851,500, the reimbursable cost. When the reimbursable cost was divided by the final approved project cost of the new building ($1,950,000) or actual cost, if less, the result was the Commonwealth's reimbursement of 94.9 per cent.

Debt service for the new building plus furnishing and equipment is $2,145.000. Using $80.24 per thousand (includes cost of principal and interest for amortizing a 20-year bond) gives a total debt service of $172,114.80 per year.

Building reimbursement payments by the state to the district were computed by multiplying the annual debt service of the district by the product of the reimbursement percentage and the aid ratio (.9490 x .6193) for a product of .5877. The result is $101,151, the yearly reimbursement payments by the state to the district.

The total additional cost of operating the district with the new building when the reimbursement is taken into account is (19.20 - 5.42) 13.78 mills for each of the 20 bond years.

Therefore, the 45-15 plan is (13.78 - 6.32) or 7.46 mills lower than the new building after two years in terms of the cost to the school district (13.78--net cost with new building minus 6.32 from third year on cost for 45-15 plan). This result supports previous conclusions that an all-year plan can save a school district school construction costs. In the case of the Annville-Cleona School District, this is true even though substantial amounts of expenditures were planned for additional portable classrooms for the all-year plan.

What is the effect of the state basic school subsidy upon the per pupil costs of an all-year plan or a new building? The maximum state instructional subsidy for 1970-71 payable in 1971-72 is $620, while the maximum for 1971-72 payable in 1972-73 will be $665. If the approved per pupil expenditure of a district exceeds the state reimbursable maximum, the district must provide the difference. In the case of the Annville-Cleona School District, the approved reimbursable cost was $591 for 1970-71 payable in 1971-72, so increased operating costs will result in more state subsidy for this district.

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*Reimbursable pupil capacity determined by the School Construction Bureau.

Can the 45-15 plan save money over a new building program? The total operating expenditures per pupil will be about $960 for the 45-15 plan compared to about $1,011 for the new building, for a savings of about $51 per pupil for the 45-15 plan. After two years, this savings will increase to about $89 per pupil in favor of the 45-15 plan. This is due to the start-up costs estimated at $100,000 a year for two years.

What are the savings to the Pennsylvania Department of Education? If the 45-15 plan is selected by the school district in preference to the new building, the state saves its yearly building reimbursement to the district of $101,151 per year for 20 years (the term of the district's bond issue) or a total of $2,023,000. The state can save a considerable amount of money by encouraging use of an all-year plan in lieu of a new building.

The present state subsidies may not encourage districts to select an all-year plan instead of a new building. For districts that have a high aid ratio, the new building alternative is attractive because most of the cost is paid by the state and the district can build a new building and avoid all the difficulties of retraining teachers, publicity and public relations and the tasks of curriculum reorganization for an all-year plan.

Year-round schools could be encouraged by Pennsylvania providing additional subsidies for year-round operations.

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APPENDIX A

ANNVILLE-CLEONA SCHOOL DISTRICT

THE SCHOOL PLANT
(REVISED)

by

Dr. Ralph Swan

August 1971

The School Plant
(revised)

The education program desired by a district is the first consideration when planning for the most effective utilization of existing facilities and in the planning of new facilities. The section of this report on the curriculum of the school sets forth the philosophy and objectives of the schools and lists course offerings and procedures employed to meet these goals. Of equal significance are the techniques and instructional devices and materials employed by the instructional staff as they strive to reach the objectives. The spaces provided in which teachers and pupils work become very important in determining whether the objectives of the school are to be attained.

Children need safe, comfortable, attractive, well lighted and well ventilated spaces in which to work and learn. They should not be confined to the same area all day but have libraries, laboratories, large and small work areas, instructional materials and aids, and furniture designed for their particular interests and maturity. Teachers, too, need spaces for developing instructional materials, conference and reference materials rooms, and other facilities that will encourage innovation and stimulate professional growth. In keeping with the evolving philosophy of the school, the buildings must contribute to individualized growth and accomplishment.

Some underlying principles affecting future building in the Annville-Cleona Schools can be gleaned from the everchanging curriculum and the philosophy, practices and aspirations of the Annville-Cleona professional staff. Among these are the following:

1. New attention is being focused upon the impact of environment and physical experiences of the pre-school and early school children. Emphasis will be placed on "Learning to Read" programs of the early grades, the heart of a successful school, so that none move on without achieving maximum capability and that none be retained because of the progress of others.

2. There is an urgent need for a broadened and enriched program for children of the intermediate grades (from 5 or 6 through 8).

3. The secondary school will continue to be specialized and will alter courses to relate to the social, cultural and economic problems of youth.

4. Learning spaces will be divided acoustically and visually to accommodate the people, the process and the program. The double loaded corridor, back-to-back box design, will gradually give way to zones of flexible space.

5. Planning any new school is a major undertaking involving philosophy, development of concepts, innovation, the training of teachers, and maturity in understanding the potentialities and limitations of change.

6. Changes in procedures and practices in any grades have major implications for instruction in the succeeding grades.

BUILDING CONSTRUCTION PROGRAM

The building program for the years ahead should provide good facilities for all children in accordance with the program envisioned and at the lowest cost to the community. In keeping with this design, the following procedures are recommended:

1. Provide for improved facilities for grades K through 5 by the modernization of the Cleona and the North-Annville buildings and the construction of a new elementary building to serve children of Annville and South-Annville Townships. This will require the following:

   (a) The addition of a "Learning Materials Center" and space equivalent to three classrooms at the Cleona building. Alteration to existing classrooms should be made as the planned "un-graded" program for those lower grades evolves.

   (b) The addition of a "Learning Materials Center" at the North-Annville building and such alteration as necessary as the planned "un-graded" program evolves.

   (c) The construction of a new elementary building on the recently acquired site adjacent to the secondary school. This building would provide two kindergarten rooms, one special education room, and the equivalent of three rooms for each of the five grades of the school. It would also include a "Learning Materials Center," a multi-purpose room, a cafeteria, and such other facilities needed to effect the program planned for these grades.

2. Renovate the Annville elementary building to convert it to a Middle School for grades 6, 7 and 8. This three-story building with a mixture of standard and oversize classrooms, gymnasium and other facilities is more adaptable to a middle school than to a modern elementary or primary school. No expansion of the building is needed. Renovations would not be a major undertaking and the building is so structurally sound that it will probably outlast the educational adequacy of the building.

Alterations to this building would probably exclude the following:

Expansion of the library to include one of the large inside classrooms now listed as a special education room to provide the "Learning Materials Center" needed for a good middle school.

Equipping and furnishing certain classrooms for use as laboratories, music, art, and other special instruction in accordance to the program to be offered.

Locker rooms would also need to be provided for the physical education program of the Middle School.

Carpeting of Learning Materials Center and certain classrooms. Wood floors, especially, need improved and carpeting contributes much to instruction, and installation and maintenance is not considered more costly when floors need new surfacing.

Provision for more flexible learning spaces if needed to accommodate the process when the program of the school is developed.

DEPLOYMENT OF MIDDLE SCHOOL PUPILS
AFTER RENOVATION

CLEONA

Grades	No. Of Classrooms	Pupils Per Room	No. Of Pupils
6-8	20*	30	600

* 25 existing less one for library, two for cafeteria, two not to be used for home rooms.

3. The use of the secondary building as a high school for grades 9 through 12 will require little or no alteration beyond that caused by the ever-changing techniques and offerings of a good high school. The library should be expanded, conference and department rooms are needed and adjustments will be made by elimination of certain seventh and eighth grade subjects. Projections indicate the building will operate somewhat below capacity throughout the decade of the study.

Reimbursement on building projects by the Commonwealth begins after approval of the project. Since this approval now lags about two years behind the date of application, it is suggested that application for the additions as well as the new elementary building be made in anticipation of this lapse of time.

Appendix A (Continued)

Future Annual Rental Payments
Annville-Cleona School District
1968-69 to 1989-90

Year	Cleona Elementary	Annville Elementary	Area High School	North Annville Elementary	High School Addition	Total
1968-69	$17,500	$41,900	$143,200	$19,500	$30,000	$252,100
1969-70	17,500	41,900	143,200	19,500	30,000	252,100
1970-71	17,500	41,900	143,200	19,500	30,000	252,100
1971-72	17,500	41,900	143,200	19,500	39,000	261,100
1972-73	17,500	41,900	143,200	19,500	44,000	266,100
1973-74	17,500	41,900	143,200	19,500	57,000	279,100
1974-75	17,500	41,900	143,200	19,500	57,000	279,100
1975-76	17,500	41,900	143,200	19,500	57,000	279,100
1976-77	17,500	41,900	143,200	19,500	57,000	279,100
1977-78	17,500	41,900	143,200	19,500	57,000	279,100
1978-79	17,500	41,900	143,200	19,500	57,000	279,100
1979-80	17,500	41,900	143,200	19,500	57,000	279,100
1980-81	17,500	41,900	143,200	19,500	57,000	279,100
1981-82	17,500	41,900	143,200	19,500	57,000	279,100
1982-83	17,500	41,900	143,200	19,500	57,000	279,100
1983-84			143,200	19,500	57,000	219,700
1984-85			143,200	19,500	57,000	219,700
1985-86			143,200	19,500	57,000	219,700
1986-87			143,200	19,500	57,000	219,700
1987-88				19,500	57,000	76,500
1988-89				19,500	57,000	76,500
1989-90					57,000	57,000

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Appendix A (Continued)

Unused General Obligation Bonding Power
Annville-Cleona School District
1958-59 to 1978-79*

Year	Outstanding	Total Bonding Power Without Vote	Available Without Vote	Total Bonding Power With Vote	Available With Vote
1958-59		$ 205,078	$ 205,078	$ 717,772	$ 717,772
1958-60		208,989	208,989	731,462	731,462
1960-61		290,757	290,757	1,017,649	1,017,649
1961-62	$156,000	299,775	143,775	1,049,212	993,212
1962-63	240,000	304,788	64,788	1,066,757	826,757
1963-64	214,000	317,750	103,750	1,112,126	898,116
1964-65	188,000	325,255	137,255	1,138,394	950,394
1965-66	162,000	333,621	171,621	1,167,674	1,005,674
1966-67	136,000	854,581	718,581	2,563,743	3,427,743
1967-68	110,000	872,512	762,512	2,617,535	2,507,535
1968-69	84,000	898,968	814,968	2,696,904	2,612,904
1969-70	58,000	912,095	854,095	2,736,285	2,678,285
1970-71	32,000	935,708	903,708	2,807,123	2,775,123
1971-72	10,000	959,320	949,320	2,877,960	2,867,960
1972-73		982,930	982,930	2,948,790	2,948,790
1973-74		1,006,545	1,006,545	3,019,635	3,019,635
1974-75		1,030,160	1,030,160	3,090,480	3,090,480
1975-76		1,053,770	1,053,770	3,161,310	3,161,310
1976-77		1,077,380	1,077,380	3,232,140	3,323,140
1977-78		1,100,995	1,100,995	3,302,985	3,302,985
1978-79		1,124,610	1,124,610	3,373,830	3,373,830

*Years from 1958-59 to 1965-66 based on two per cent of assessed value without electorate and seven per cent of assessed valuation with vote of electorate; figures changed by law to five per cent without electorate and 15 per cent with electorate in 1966-67 school year. Assessed valuations for 1970-71 and subsequent years based on estimates of assessed valuation based on past growth.

Appendix A (Continued)

Deployment of Elementary School
Pupils after Construction
Annville-Cleona School District

Cleona
(With three classrooms and LMC added)

Grade	Number of Classrooms	Pupils Per Room	Number of Pupils
K	1	45-55	50
1	3	20-25	65
2	3	20-25	65
3	3	23-28	75
4	2	25-30	55
5	2	25-30	55
Special Ed.	1	12-18	15
	15		380

North Annville
(With LMC ADDED)

K	1	45-55	50
1	3	20-25	65
2	3	20-25	65
3	2	23-28	50
4	2	25-30	55
5	2	25-30	55
	13		340

New Elementary

K	2	45-50	100
1	3	20-25	65
2	3	20-25	65
3	3	23-28	75
4	3	25-30	80
5	3	25-30	80
Special Ed.	1	12-18	15
	18		480

Summary Three Elementary

Grade	Classrooms	Pupil Capacity	1980-81 Pupils Projected
K	4	200	210
1	9	200	196
2	9	200	189
3	8	200	179
4	7	200	173
5	7	200	172
Special Ed.	2	30	30
	46	1,230	1,149

Note: The 25 classroom elementary building would be used as a middle school, grades 6 through 8.

APPENDIX B

Annville-Cleona School District

Estimated Total Expenditures, 1971-72

Category	Elementary	Secondary	District
Administration	$ 59,220	$ 48,453	$ 107,673
Professional salaries (2)	19,470	15,930	35,400
Secretarial, clerical (4)	12,540	10,260	22,800
Other	27,210	22,263	49,473
Instruction	653,533	653,617	1,307,150
Salaries, teachers (113)	522,724(56)	544,829(57	1,067,553
Other professionals (7)	48,543	39,300	87,843
Secretarial, clerical (15)	25,495(9.5)	21,220(5.5)	46,715
Textbooks	10,000	10,000	20,000
Teaching materials	30,984	25,351	56,335
Other	15,787	12,917	28,704
Attendance (3)	13,546	26,300	39,846
Health	14,427	12,503	26,930
Professional salaries (2.5)	11,980(1.5)	10,500(1)	22,480
Other	2,447	2,003	4,450
Operation	85,645	74,608	160,253
Salaries	37,362(8)	35,103(6)	72,465
Heat	14,850	12,150	27,000
Utilities	14,850	12,150	27,000
Other	18,583	15,205	33,788
Maintenance	11,808	9,661	21,469
Salaries (1.83)	6,251	5,114	11,365
Other	5,557	4,547	10,104
Fixed Charges	96,219	78,725	174,944
Social Security, pension	67,683	55,377	123,060
Other	28,536	23,348	51,884
Food Service	2,750	2,250	5,000
Student Body Activities	None	37,545	37,545
Net Current Expense	937,148	943,662	1,880,810
Transportation	35,071	28,694	63,765
Salaries	16,060	13,140	29,200
Other	19,011	15,554	34,565
Capital Outlay	6,868	5,620	12,488
Debt Service	93,778	189,950	283,728
Principal	93,300	189,200	282,500
Interest	478	750	1,228
Expenditures to Other Districts	36,450	44,550	81,000
Total Expenditures	$1,109,315	$1,212,476	$2,321,791

Note: Numbers in parentheses specify numbers of personnel employed.

APPENDIX C

Computations of Profiles

Appendix C (Continued)

Profile 1

Assessed value $\frac{19,267,460}{(APU)2654} = 7,260$ (rounded)

True value $\frac{37,790,200}{(APU)2654} = 14,239$ (rounded)

Local effort $\frac{1,108,968/2642}{14239} \times 100 = 2.9\%$

Local revenue $\frac{1,108,968}{2642} = 420$

State aid $\frac{1,152,381}{2642} = 436$

Federal aid $\frac{32,000}{2642} = 12$

Appendix C (Continued)

Profile 2

Grand total expenditure $\frac{2,299,521}{2642} = 870$

Capital outlay and debt service $\frac{283,728 + 12,488}{2642} = 112$

Total current expenditures $\frac{1,858,540 + 63,765}{2642} = 728$

Transportation $\frac{63,765}{2642} = 24$

Net current expenditures $\frac{1,858,540}{2642} = 703$

Outstanding debt $\frac{2,214,969}{2654} = 834$

Appendix C (Continued)

Profile 3

Net current expenditures $\frac{1,858,540}{2642} = 703$

Administration $\frac{107,673}{2642} = 41$

Instruction $\frac{1,284,880}{2642} = 486$

Operation $\frac{160,253}{2642} = 61$

Maintenance $\frac{21,469}{2642} = 8.1$

Fixed charges $\frac{174,944}{2642} = 66$

Textbooks $\frac{20,000}{2642} = 7.6$

Teaching materials $\frac{56,335}{2642} = 21.3$

Appendix C (Continued)

Profile 4

Administration $\frac{100 \times 107,673}{1,858,540} = 5.8\%$

Instruction $\frac{100 \times 1,284,880}{1,858,540} = 69.1$

Textbooks $\frac{100 \times 20,000}{1,858,540} = 1.07\%$

Teaching materials $\frac{100 \times 56,335}{1,858,540} = 3.03\%$

Operation $\frac{100 \times 160,253}{1,858,540} = 8.62\%$

Maintenance $\frac{100 \times 21,469}{1,858,540} = 1.15\%$

Fixed charges $\frac{100 \times 174,944}{1,858,540} = 9.41\%$

Transportation $\frac{100 \times 63,765}{1,858,540} = 3.43\%$

Profile 5

Beginning salary, teachers $6,500

Maximum salary, teachers $11,900

Average salary, teachers $\frac{\$1,045,283}{113} = \$9,250$

Average salary, administrators $\frac{\$35,400}{2} = \$17,700$

Average salary, other professionals $\frac{\$87,843}{7} = \$12,549$

Average salary, clerical $\frac{22,800 + 46,715}{19} = \$3,659$

Average salary, maintenance $\frac{\$11,365}{1.837} = \$6,200$

Average salary, custodial $\frac{\$72,465}{14} = \$5,176$

Profile 6

Professional staff $\frac{3 + 2 + 113 + 7 + 2.5}{2.5} = 51.0$

Classified staff $\frac{69}{2.5} = 27.6$

Administration $\frac{2}{2.50} = 0.80$

Classroom teachers $\frac{113}{2.5} = 45.2$

Other instructors $\frac{7}{2.5} = 2.8$

Clerical $\frac{4 + 15}{2.5} = 7.6$

Custodial $\frac{14}{2.5} = 5.6$

Maintenance $\frac{11/6}{2.5} = 0.73$

APPENDIX D

Instructions for Preparing Year-Round Education Index Work Sheet*

Complete Parts 1, 2 and 3 for the district in its present organization.

Decide classroom organization and building use plans for each new alternative. Construct classroom organization charts. Decide number classroom teachers required.

Complete Part 1 and Part 3 for the elementary and secondary divisions and the district as a whole for each proposed all-year plan and each proposed new building plan.

To partition costs of existing district into elementary and secondary divisions, decide upon a rationale to guide the partition, e.g., according to enrollment of the divisions.

To partition fixed charges between the divisions, decide upon a rationale to guide the partition, e.g., in proportion to the number of teachers or add the salaries in each division and use a percentage of salaries.

To determine debt service payments under new alternatives for each division, decide upon a realistic interest rate and term of bond issue, then obtain an amortization table for the rate and term, obtain cost per thousand of principal and interest of a bond issue.

To determine the number of personnel that are required under each category of the budget, record the number to the nearest tenth of a full-time equivalent, e.g., 1.8 persons.

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*Modified from Furno, Cost of Education Index Survey, 1971.

Appendix D (Continued)

Year-Round Education Index Work Sheet

Part 1

Number of Personnel

	Enrollment	Attendance	Classrooms
Elementary Pupils (sum 1-6 and full-time K) .			
Total (usually grades 1-6)	____	____	____
Grade 1	____	____	____
Grade 2	____	____	____
Grade 3	____	____	____
Grade 4	____	____	____
Grade 5	____	____	____
Grade 6	____	____	____
Kindergarten (convert to full-time equivalents)	____	____	____
Grade 7?	____	____	____
Grade 8?	____	____	____
Special	____	____	____
Secondary Pupils			
Total (usually grades 7-12) special and vocational)	____	____	____
Grade 7?	____	____	____
Grade 8?	____	____	____
Grade 9	____	____	____
Grade 10	____	____	____
Grade 11	____	____	____
Grade 12	____	____	____
Special	____	____	____
Vocational	____	____	____
100 Administration			
Total			____
110.1 Number of professional personnel			____
110.2 Number of secretarial and clerical workers			____
200 Instruction			
213 Number of classroom teachers			____
211, 212, 214 Number of other professional instructional staff (include principals)			____
215 Number of secretarial and clerical workers			____
300 Attendance Services (guidance personnel)			____
400 Health Services (number of professional personnel)			____

Appendix D (Continued)

Part 1 (Continued)

Number of Personnel

610 Number of operational workers _____

710 Number of maintenance workers _____

510 Number of transportation workers _____

Total professional personnel _____

Total classified personnel _____

What is starting salary for a beginning classroom teacher with a BA degree? _____

What is the highest salary a classroom teacher can reach? _____

How many years are required by the district for a teacher to reach maximum salary? _____

Appendix D (Continued)

Part 2

Financial Data

Revenue of School District

Total _____
- Local school taxation revenue _____
- Total amount received from state _____
- Total amount received from U.S. Government _____
- Other (such as tuition from other districts) _____
- Surplus from preceding year _____

Property Valuation and Bonded Debt
- Total assessed valuation all local taxable property _____
- Full valuation all local taxable property _____
- What is ratio of assessed to full valuation? _____
- Value of outstanding bonded indebtedness (per Sept. 1) _____

Unused Bonding Power of the District
- Total unused bonding power without vote _____
- Total unused bonding power with vote _____

The increase in expenditure to fund alternative organizations of school district is _____

- All-year school plan 1 _____
- All-year school plan 2 _____
- New building plan 1 _____
- New building plan 2 _____

The per cent tax collection of total assessed value of district is _____

One mill equivalent for the district is _____

What is the aid ratio for the district? _____

What is the school building reimbursement percentage? (for proposed new building) _____

What is the reimbursable capacity of the new building? _____

What is the maximum per pupil instructional subsidy for the district? _____

What is the current schedule of debt service payments? _____

What are the principal amounts, interest and term of existing bond issues? _____

What is the Moody or Standard and Poor's rating of the district? _____

What is the total indebtedness of the district? _____